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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/614,495 | 07/07/2003 | Robert Ian Gresham | 18054 | 9267 |
| 26794 | 7590 | 10/07/2004 | EXAMINER | |
| TYCO ELECTRONICS CORPORATION 4550 NEW LINDEN HILL ROAD, SUITE 450 WILMINGTON, DE 19808 | | | | CHOE, HENRY |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2817 | |

DATE MAILED: 10/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

| | | |
|-----------------|---------------------|--|
| Application No. | 10/614,495 | |
| Examiner | GRESHAM, ROBERT IAN | |
| Henry K Choe | Art Unit 2817 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 24 September 2004.
2a) This action is **FINAL**. 2b) This action is non-final.
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) Claim(s) _____ is/are allowed.
6) Claim(s) 1-18 is/are rejected.
7) Claim(s) _____ is/are objected to.
8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8, 9, 12 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Jp58-181310 (Fig. 1).

Regarding claims 1 and 12, Jp58-181310 (Fig. 1) discloses an amplifier circuit comprising a first differential amplifier pair (8, 9) which provides a portion of an isolation channel (a signal coming out of a collector of transistor 9), a second differential amplifier pair (10, 11) which provides a portion of a transmit channel (a signal coming out of a collector of transistor 11), and a third differential amplifier pair (1, 2) which provides a control bias (a signal coming out of a collector of transistor 1 or transistor 2) and wherein the control bias (a signal coming out of a collector of transistor 1 or transistor 2) maintains a substantially constant current density since Sakaguchi has the same structure as the claim limitations, Sakaguchi inherently has capability to perform the claim functional limitations.

Regarding claim 2, an input terminal (13 or 14) which is coupled to the first differential amplifier pair (8, 9) and the second differential amplifier pair (10, 11), and an output terminal (16) which is coupled to the second differential amplifier pair (10, 11).

Regarding claim 3, a control terminal (3 or 4) which is coupled to the third differential amplifier pair (1, 2).

Regarding claims 4 and 13, the control terminal (3 or 4) which provides a bias voltage (a signal coming into the terminal 3 or 4) to the third differential amplifier pair (1, 2).

Regarding claims 5 and 6, a first transistor (2) of the third differential amplifier pair (1, 2) is disposed in the transmit channel (a signal coming out of a collector of transistor 11), and a second transistor (1) of the third differential amplifier pair (1, 2) is disposed in the isolation channel (a signal coming out of a collector of transistor 9).

Regarding claim 8, wherein the first (8 and 9) and second (10 and 11) differential amplifier pairs include two transistors with their emitters coupled.

Regarding claim 9, the limitation of an inductor is coupled to a collector of a transistor is well known in the art. Which is called a choke.

Regarding claim 18, the control bias (a signal coming out of a collector of transistor 1 or transistor 2) is supplied by a DC current source.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 10, 11 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP58-181310 (Fig. 1).

Regarding claim 7, JP58-181310 (Fig. 1) discloses all the limitations in the claim except for that the circuit is formed as an integrated circuit on one of a Silicon Germanium, Silicon Gallium Arsenide or Indium Phosphide substrate. It is well known to integrate semiconductor device in order to form of small sized Integrated Circuit (IC). Therefore, it would have been obvious to have integrated the circuit of JP58-181310 (Fig. 1) because such a modification would have advantageously produced or small-sized integrated circuit amplifier with reference to the particular one of the such materials, such materials are well known and would have been considered mere substitution of art-recognized equivalent dielectric materials.

Regarding claims 10, 11 and 14-17, JP58-181310 (Fig. 1) discloses all the limitations in the claims except for that the pulse width of the control bias is less than 500 picoseconds, between 200-300 picoseconds, the first channel provides isolation between the signal input and the signal output over a 15 GHZ to 26 GHZ range, and the second channel provides gain between the signal input and the signal output over a 14 GHZ to 28 GHZ range. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented the specific values of the components, since they are based on the routine experimentation to obtain the optimum operating parameters.

Response to Arguments

Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection. It should be noted that Sakaguchi has the same structure as the claim limitations, therefore, Sakaguchi inherently has capability to perform the claim functional limitations. That is, no "control bias means" have been claimed in order to perform the function of "maintain a substantially constant current density". Therefore, all of the structural limitations are met by the Sakaguchi reference (see MPEP 2114).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry Choe whose telephone number is (571) 272-1760.


HENRY CHOE
PRIMARY EXAMINER